We Claim:

1. A digital cellular handset comprising:

an antenna;

a radio transceiver connected to said antenna;

a radio analog-to-digital converter and a digital-to-analog converter connected to said transceiver;

a digital cellular processor/microcontroller connected to said radio analog-to-digital and digital-to-analog converters;

an Internet protocol processor/microcontroller connected to said digital cellular processor/microcontroller;

an audio analog-to-digital converter and a digital-to-analog converter connected to said Internet protocol processor/microcontroller; and

a speaker connected to said audio digital-to-analog converter and a microphone connected to said audio analog-to-digital converter; wherein,

in the receive direction the transceiver receives radio signals from said antenna and converts them into analog baseband signals, the radio analog-to-digital converter converts said analog baseband signals into raw data signals, the digital cellular processor/microcontroller processes said raw data signals into a voice over Internet Protocol packetized data stream, the Internet protocol processor/microcontroller unpacketizes and processes said voice over Internet Protocol packetized data stream into a voice data stream, the audio digital-to-analog converter converts said voice data stream into analog waveforms, and the speaker broadcasts said analog waveforms, and,

in the transmit direction the microphone receives analog waveforms, the audio analog-to-digital converter converts said analog waveforms into raw data signals, the Internet protocol processor/microcontroller packetizes and processes said raw data signals into a voice over Internet Protocol packetized data stream, the digital cellular processor/microcontroller processes said voice over Internet Protocol packetized data stream into a digital cellular compatible data stream, the radio digital-to-analog converter converts said digital cellular compatible data stream into analog signals, and the transceiver converts the analog signals into a modulated radio carrier signal which is forwarded to said antenna.

2. The digital cellular handset of claim 1 further comprising a voice electronic switch selectively switchable between a first condition in which said digital cellular processor/microcontroller is connected to said audio analog-to-digital and digital-to-analog converters when said handset is in normal voice mode, and a second condition in which said Internet protocol processor/microcontroller is connected to said audio analog-to-digital and digital-to-analog converters when said handset is in voice over IP mode.

3. The digital cellular handset of claim 1 further comprising a data electronic switch selectively switchable between a first condition in which said digital cellular/microcontroller is connected to an external data interface when said handset is in normal data mode, and a second condition in which said digital cellular

processor/microcontroller is connected to said Internet protocol processor/microcontroller when said handset is in voice over IP mode.

4. The digital cellular handset of claim 2 further comprising a data electronic switch selectively switchable between a first condition in which said digital cellular/microcontroller is connected to an external data interface when said handset is in normal data mode, and a second condition in which said digital cellular processor/microcontroller is connected to said Internet protocol processor/microcontroller when said handset is in voice over IP mode.

5. The digital cellular handset of claim 1 wherein said voice over Internet Protocol packetized data stream is packetized in accordance with one of the H.323, Session Initiation Protocol (SIP), and Media Gateway Control Protocol (MGCP) Internet protocols.

6. The digital cellular handset of claim 5 wherein said Internet protocol processor/microcontroller includes memory for storing Internet protocol software, and said Internet protocol processor/microcontroller runs said Internet protocol software to unpacketize and process said voice over Internet Protocol packetized data stream into said voice data stream.

7. A digital cellular handset comprising:

an antenna;

a radio transceiver connected to said antenna;

a radio analog-to-digital converter connected to said transceiver;

a digital cellular processor/microcontroller connected to said radio analog-to-digital converter;

an Internet protocol processor/microcontroller connected to said digital cellular processor/microcontroller;

an audio digital-to-analog converter connected to said Internet protocol processor/microcontroller; and

a speaker connected to said audio digital-to-analog converter; wherein,

the transceiver receives radio signals from said antenna and converts them into analog baseband signals, the radio analog-to-digital converter converts said analog baseband signals into raw data signals, the digital cellular processor/microcontroller processes said raw data signals into a voice over Internet Protocol packetized data stream, the Internet protocol processor/microcontroller unpacketizes and processes said voice over Internet Protocol packetized data stream into a voice data stream, the audio digital-to-analog converter converts said voice data stream into analog waveforms, and the speaker broadcasts said analog waveforms.

8. The digital cellular handset of claim 7 further comprising a voice electronic switch selectively switchable between a first condition in which said digital cellular processor/microcontroller is connected to said audio digital-to-analog converter when said handset is in normal voice mode, and a second condition in which said Internet protocol processor/microcontroller is connected to said audio digital-

to-analog converter when said handset is in voice over IP mode.

9. The digital cellular handset of claim 7 further comprising a data electronic switch selectively switchable between a first condition in which said digital cellular/microcontroller is connected to an external data interface when said handset is in normal data mode, and a second condition in which said digital cellular processor/microcontroller is connected to said Internet protocol processor/microcontroller when said handset is in voice over IP mode.

10. The digital cellular handset of claim 8 further comprising a data electronic switch selectively switchable between a first condition in which said digital cellular/microcontroller is connected to an external data interface when said handset is in normal data mode, and a second condition in which said digital cellular processor/microcontroller is connected to said Internet protocol processor/microcontroller when said handset is in voice over IP mode.

11. The digital cellular handset of claim 7 wherein said voice over Internet Protocol packetized data stream is packetized in accordance with one of the H.323, Session Initiation Protocol (SIP), and Media Gateway Control Protocol (MGCP) Internet protocols.

12. The digital cellular handset of claim 11 wherein

said Internet protocol processor/microcontroller includes memory for storing Internet protocol software, and said Internet protocol processor/microcontroller runs said Internet protocol software to unpacketize and process said voice over Internet Protocol packetized data stream into said voice data stream.

13. A digital cellular handset comprising:

an antenna;

a radio transceiver connected to said antenna;

a radio digital-to-analog converter connected to said transceiver;

a digital cellular processor/microcontroller connected to said radio digital-to-analog converters;

an Internet protocol processor/microcontroller connected to said digital cellular processor/microcontroller;

an audio analog-to-digital converter connected to said Internet protocol processor/microcontroller; and

a microphone connected to said audio analog-to-digital converter; wherein,

the microphone receives analog waveforms, the audio analog-to-digital converter converts said analog waveforms into raw data signals, the Internet protocol processor/microcontroller packetizes and processes said raw data signals into a voice over Internet Protocol packetized data stream, the digital cellular processor/microcontroller processes said voice over Internet Protocol packetized data stream into a digital cellular compatible data stream, the radio digital-to-analog converter converts said digital cellular compatible data stream into analog signals, and the

transceiver converts the analog signals into a modulated radio carrier signal which is applied to said antenna.

14. The digital cellular handset of claim 13 further comprising a voice electronic switch selectively switchable between a first condition in which said digital cellular processor/microcontroller is connected to said audio analog-to-digital and digital-to-analog converters when said handset is in normal voice mode, and a second condition in which said Internet protocol processor/microcontroller is connected to said audio analog-to-digital and digital-to-analog converters when said handset is in voice over IP mode.

15. The digital cellular handset of claim 13 further comprising a data electronic switch selectively switchable between a first condition in which said digital cellular/microcontroller is connected to an external data interface when said handset is in normal data mode, and a second condition in which said digital cellular processor/microcontroller is connected to said Internet protocol processor/microcontroller when said handset is in voice over IP mode.

16. The digital cellular handset of claim 14 further comprising a data electronic switch selectively switchable between a first condition in which said digital cellular/microcontroller is connected to an external data interface when said handset is in normal data mode, and a second condition in which said digital cellular processor/microcontroller is connected to said Internet

protocol processor/microcontroller when said handset is in voice over IP mode.

17. The digital cellular handset of claim 13 wherein said voice over Internet Protocol packetized data stream is packetized in accordance with one of the H.323, Session Initiation Protocol (SIP), and Media Gateway Control Protocol (MGCP) Internet protocols.

18. The digital cellular handset of claim 17 wherein said Internet protocol processor/microcontroller includes memory for storing Internet protocol software, and said Internet protocol processor/microcontroller runs said Internet protocol software to packetize and process said raw data signals into a voice over Internet Protocol packetized data stream,

19. A method of digital cellular communications comprising the steps of:

receiving radio signals from a digital cellular network;

converting said radio signals into raw data signals;

processing said raw data signals into a voice over Internet Protocol packetized data stream;

unpacketizing said voice over Internet Protocol packetized data stream into a voice data stream;

converting said voice data stream into analog waveforms; and

broadcasting said analog waveforms.

20. The method of claim 19 further comprising the steps of:

receiving analog waveforms;

converting said analog waveforms into raw data signals;

packetizing said raw data signals into a voice over Internet Protocol packetized data stream;

processing said voice over Internet Protocol packetized data stream into a digital cellular compatible data stream;

converting said digital cellular compatible data stream into radio signals; and

transmitting said radio signals to a digital cellular network.

21. A method of digital cellular communications comprising the steps of:

receiving analog waveforms;

converting said analog waveforms into raw data signals;

packetizing said raw data signals into a voice over Internet Protocol packetized data stream;

processing said voice over Internet Protocol packetized data stream into a digital cellular compatible data stream;

converting said digital cellular compatible data stream into radio signals; and

transmitting said radio signals to a digital cellular network.

22. A method of initiating digital cellular communications over the Internet between a first Internet protocol enabled device and a second Internet protocol enabled device comprising the steps of:

generating an SMS message with the Internet Protocol (IP) address of the first Internet protocol enabled device embedded therein;

forwarding said SMS message to the second Internet protocol enabled device;

extracting the IP address from said SMS message; and

using the IP address to connect the second Internet protocol enabled device to the first Internet protocol enabled device over the Internet.

23. The method of claim 22 further comprising the steps of the first Internet protocol enabled device:

receiving radio signals from a digital cellular network;

converting said radio signals into raw data signals;

processing said raw data signals into a voice over Internet Protocol packetized data stream;

unpacketizing said voice over Internet Protocol packetized data stream into a voice data stream;

converting said voice data stream into analog waveforms; and

broadcasting said analog waveforms.

24. The method of claim 23 further comprising the steps of the first Internet protocol enabled device:

receiving analog waveforms;

converting said analog waveforms into raw data signals;

packetizing said raw data signals into a voice over Internet Protocol packetized data stream;

processing said voice over Internet Protocol packetized data stream into a digital cellular compatible data stream;

converting said digital cellular compatible data stream into radio signals; and

transmitting said radio signals to a digital cellular network.

25. The method of claim 22 further comprising the steps of:

connecting to an Internet service provider;

attributing an IP address to the first Internet protocol enabled device; and

forwarding said IP address to the first Internet protocol enabled device.

26. The method of claim 22 wherein the SMS message further includes an Internet Protocol call request embedded therein.

27. A method of initiating digital cellular communications over the Internet comprising the steps of:

receiving an SMS message with an Internet Protocol (IP) address embedded therein;

extracting the IP address from said SMS message; and

using the IP address to connect to an Internet

protocol enabled device.

28. The method of claim 27 wherein the step of using the IP address to connect to an Internet protocol enabled device includes the steps of:

receiving analog waveforms;

converting said analog waveforms into raw data signals;

packetizing said raw data signals into a voice over Internet Protocol packetized data stream;

processing said voice over Internet Protocol packetized data stream into a digital cellular compatible data stream;

converting said digital cellular compatible data stream into radio signals; and

transmitting said radio signals to a digital cellular network for forwarding to said Internet protocol enabled device.